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MEMORANDUM FOR: Ex

Executive Committee Members

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VIA

: Deputy Director for Administration

FROM

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Bruce T. Johnson

Director of Data Processing

SUBJECT

FY 1981 Report on ADP in the CIA

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REFERENCE

Memorandum to DDCI from D/ODP dtd. 16 May 1980, Subject: Fiscal Year 1980 Review of Automatic Data Processing (ADP)

Projects (Exec. Registry 9037-80/2)

Summary: This memorandum is a substitute for the annual EXCOM briefing on ADP in CIA. It concentrates on the services provided by the Office of Data Processing (ODP) and concludes that ODP's existing and planned capabilities are basically adequate to meet the foreseeable central computer service requirements of CIA. Some new investments to ensure reliability and availability will be necessary, and an increase in applications development manpower seems called for.

1. Introduction: In 1977 the management of CIA's ADP resources was studied by the Executive Advisory Group (EAG), the forerunner of today's Executive Committee. Out of those studies developed the practice, beginning in 1978, of having the Director of Data Processing present a "State of ODP" briefing to the Committee, followed by reports from user components on major ADP activities, which were expected to cost \$250,000 in the current fiscal year for ongoing projects, or that same amount over three years for new initiatives.

2. In fiscal years 1978, 1979, and 1980, late in the first quarter or early in the second quarter, the EXCOM devoted several meetings to the review of ADP, beginning each time with an ODP

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overview based upon data collection by ODP from major users of ADP. Following each annual review, a guidance memorandum was issued, validating the proposed use of ADP resources and establishing limits on the growth of individual projects. Subsequently, if rates of consumption of these resources
increased enough to cause a project to exceed its authorized
limit by more than 10%, the component was required to notify the
Comptroller and submit a justification for the increase. After
the 1980 review, at the request of the DDCI, a summary of the
results of the review was prepared (see reference).
3. Subsequent to the 1980 review the Information Handling Task Force completed its work and, as a result of one of its
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3. Subsequent to the 1980 review the Information Handling Task Force completed its work and, as a result of one of its recommendations, the position of Information Handling Systems Architect was established. In approving a tentative charter for the Architect, the EXCOM included the responsibility to report on the "state of Information Handling to EXCOM," adding parenthetically "(incorporates ADP review)."

4. As FY 1981 began, ODP once more collected the data needed for its part of the annual review, although the timing and nature of the review were uncertain, given the arrival on the scene of the new Architect and the interruption in the routine work of the EXCOM and its staff caused by the transition to new Agency management. Discussions involving the EXCOM staff, the Architect, and ODP led to the decision to submit a brief summary report as a substitute for the briefings previously provided. That report follows.

Agency ADP Budget: Attachment A represents the Agency ADP budget for fiscal years 1980, 1981, and 1982, by Directorate, with separate entries for SAFE, NPIC and ODP, which together account for 84% of the 1981 total. In FY 1981 the Agency ADP budget increased 18% over FY 1980, rising from principally due to the scheduled rise in the SAFE funding profile, although imagery-related budgets also rose and of course inflation played its part. It is estimated that in this fiscal to year Agency staff personnel will devote [ADP-related activities, with the DDA accounting for 61% of the effort. The ADP budget for FY 1982 is 35% larger than FY 1981, the increase attributable to the upgrade of the NPIC Data System and CAMS 2 (approximately L , plus a few smaller projects like 4C and, of course, inflation.

6. Consumption of ODP Resources in FY 1980: Each month ODP provides its customer components with a Project Activity Report (PAR) which shows how much of ODP's resources were consumed by

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each of the component's ADP projects. The pricing system is designed to permit nominal "recovery" of the entire ODP budget. The primary charges, accounting for about 65% of the total, are for the use of central processing services. The other charges included direct contract costs (15%), application software development and maintenance (12%) and dedicated support such as computer systems, terminals and direct access storage space

- 7. ODP Supported Major Projects by Directorate: ODP supported 17 major ADP projects in FY 1981. Attachment B shows the level of investment in these projects by Directorate, and the percentage of increases expected in their use of ODP's major services, Batch, Interactive (VM), and Database (GIMS). Attachment C lists each of these 17 major ADP projects, which range from 1 to 18% of the ODP budget and together consume 57% of that budget. (We also received reports on 17 other projects which did not meet the \$250K threshold requirement but which were significant enough to include in the annual review. The projects in this second category account for an additional 6% of ODP's resources.)
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- 8. Major Component-Budgeted ADP Initiatives: Attachment D provides directorate-level summary information for FY 1981 and 1982 on 14 component-budgeted ADP initiatives, and Attachment E identifies the individual projects. Although primarily funded by the customer component, many of these projects entail some level of ODP support, as shown in the tables. Most of these projects will continue into FY 1983, and resources to support them have been included in the Program Plans submitted by the sponsoring components. (Because SAFE is the subject of separate review by its Steering Committee and the Directors of DIA and CIA, it has been excluded from previous EXCOM reviews, and its budget has not been included in Attachments D or E. The ODP budget for the support of SAFE development is included in Attachment C, however.)
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- 9. Review of Major Projects: Our review of the data on these major projects reveals several issues worth highlighting.

Automated Management System (CAMS) continues to be the largest of the ODP-supported projects. Total cost of services represents of the ODP budget. More significant, however, is the continuing CAMS requirement for of the staff employees in the applications component of ODP of the total applications staff when one counts contractor personnel).

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- b. Interface to Central Data Banks. Several component-budgeted projects involve minicomputer-based systems for specialized processing needs. Interfaces to central ODP files are required for access to pertinent This relatively new requirement for delivery of large amounts of data in electrical form to remote processing sites further heightens our already growing concern over the availability and reliability of data processing and communications facilities to support the rapidly increasing number of users who require frequent and immediate access to their data. New investments will have to be made to ensure that our network of computer and communication systems operate with the necessary availability and reliability to guarantee the continuing delivery of critical services to our end users.
- c. Terminal Availability. The tight limits imposed on ODP for new terminal acquisitions continue to provide a constraint on the growth of project activity. Budgetary restrictions have hampered our ability to provide anything beyond the minimum level program requirements of our end users. By FY 1983, we will only be able to fund 77% of our user's minimum level requirements and less than 25% of their overall requirements. At least two directorates (DDO and NFAC) are planning to fund their most critical requirements that cannot be supported by ODP.

Applications Development Resources. success of certain projects reviewed is very much dependent upon the availability of adequate program development resources. Because of the increasing maintenance burden we have had to bear as new systems are added to the existing base of developed production systems, the present share of ODP resources available for new applications development has been shrinking drastically at the same time that the requirement for new application development from virtually all parts of the Agency has reached an unprecedented level (the backlog exceeds 50 workyears). Although our Program Plan for FY 1983 contains 35 additional staff positions to help meet this need, our problems are more immediate. schedules for several of the ODP-supported projects (in particular, PAYROLL) are in jeopardy as a result.

10. ODP Workload Trends: The major projects provide a basis for projecting only part of the demand for ODP's services. The trend lines for services to all projects, large and small, are all rising. We measure these trends for Batch Service (average prime-time as well as average peak 24-hour workload), Interactive (VM) Services, Database Management Services (GIMS), DDO Services and CAMS Service.

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a. Batch: Still the most economical way to meet the needs of a large number of users, Batch continues to grow at the rate of 10 to 15% annually. To avoid driving customers to the use of more expensive on-line service, we size our Batch capability to provide reasonable prime-time turnaround, with assurance of 24-hour turnaround capacity for lower priority When any other service is forced into its backup configuration, Batch is usually the first to be reduced, but because it can be divided among several CPU's the impact on users can be cushioned. Batch capacity is effectively augmented whenever other demands cause us to expand our total computing power, and plans for other services ensure adequate capacity here.

b. Interactive: VM service, upgraded in FY 1980 to an Amdahl V8, continues to grow and a larger IBM 3033 multiprocessor (MP) was installed in March 1981. Currently, there are users and the issuance of passwords for new users continues to increase steadily. In 1983 we project a workload which will exceed the capacity of the IBM 3033 MP. Future expansion will require ODP to examine alternative means of providing support to VM users. The DO already has a copy of the VM system available in the Special Center which affords protection of their data.

- C. Database Management Systems: The Generalized Information Management System (GIMS) is used to provide central Database Management System (DBMS) services. Currently, there are some 35 distinct databases on the single GIMS CPU, with 18 more scheduled for implementation in FY 1981. Small increases in CPU power are projected in FY 1981 and FY 1982 to meet a 29% rate of increase in demand. This service is also available as a separate service in the Special Center.
- DDO Services: The Directorate of Operations has provided ODP with a comprehensive set of near- and long-term requirements. The most significant of these, in terms of their impact on ODP's computer systems plans, include (1) the DDO's requirement for compartmented VM and GIMS services, and (2) its requirement for a single system capable of running all of its critical on-line applications. This second requirement is to enable effective operation of these applications even when the DO second machine has been preempted to backup CAMS service. Plans to meet these requirements call for upgrading one of the two DDO machines in FY 1981 and the other in FY 1982. Both of these upgrades will be accomplished by moving larger CPU's from the Ruffing Computer Center to the Special Center.
- e. <u>CAMS</u>: The COMIREX Automated Management System (CAMS) will grow because of its direct support to overhead reconnaissance programs. The

current CAMS system is expected to satisfy user requirements until 1984 when major new collection systems come onstream. A follow on system, CAMS 2, will then be required. A large CPU will be obtained for development of this new system and will then become the production system for CAMS 2 and also support graphics capabilities using minicomputers as interfaces.

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- 11. ODP Plans and Investments: The major thrust of ODP planning and investment through FY 1983 is focused on ensuring that Batch, Interactive (VM), Database, DDO services, and CAMS have the necessary capacity, responsiveness, and availability to meet growing Agency needs.
 - FY 1981: Two of our basic services will require upgrading in FY 1981 to meet increased workloads. The IBM 3033 MP system was installed to meet the need for more capacity on our VM interactive system. This service had reached saturation with simultaneous users online. The multiprocessor will allow us to handle over simultaneous users with satisfactory response time. An existing Amdahl V6 will be freed from its present use to replace the computer system supporting critical DDO services. Because of the use of the same hardware architecture for all ODP general services, it is possible to upgrade multiple services with the procurement of a single new computer system. More capacity will be provided as a result to handle the 18 new GIMS applications planned for FY 1981.
 - b. FY 1982: In FY 1982 a new computer system will be installed to meet the planned growth in batch processing requirements. This acquisition will allow us to also upgrade the backup capability for both DDO services and CAMS needs. A second computer will be installed for the development needs of the CAMS 2 project. A modest upgrade in database services will also be provided. In order to meet the continuously growing requirement for online storage, we will embark on a major

upgrade of our DASD (Direct Access Storage Devices) capacity starting in FY 1982 when technologically superior DASD will be available at substantially lower cost than current technology.

- one new processor to meet the estimated interactive workload of over simultaneous users on the VM system. Other than VM, no additional processing upgrades are anticipated in FY 1983. In the absence of any new requirement, the FY 1982 upgrades will be adequate to support our other major services through the end of FY 1983.
- d. FY 1984 and Beyond: Our plans for FY 1984 and beyond call for annual upgrades to meet projected workload demands for computer services. We will continue to reallocate to other needs equipment that is replaced as a result of upgrading one service, in line with our policy of effecting improvements in multiple services from the procurement of a single new processor. The adequacy of central computer service can thus be guaranteed provided that the ODP budget base is protected from the impact of inflation.

Conclusion: Although there are outstanding issues in the areas of applications development, terminal availability and system reliability, as noted in paragraph 9 above, it is apparent that ODP has or will have adequate central computing and data storage capacity to meet projected demand through FY 1982 and our Program Plan for FY 1983, if approved, will ensure that we continue to have the necessary computer power. In view of the fact that we are already well into the third quarter of this fiscal year, we recommend that we and the requesting components be authorized to continue with the major projects listed in the attachments at the level of investment requested, subject to change as a result of decisions on the 1983 Program. formal action is taken to change the reporting process, ODP will continue as in the past, alerting customers when overruns appear likely on ODP-supported activities, and assisting them to report the reasons for increased requirements to the Comptroller.

Bruce T Johnson

Attachments: a/s

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